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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ABOAGYE, MICHAEL

ART UNIT PAPER NUMBER

1725

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,412

Applicant(s)

IMANISHI ET AL.

Examiner

Michael Aboagye

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/719,768.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/22/04, 12/02/04, 05/27/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The status of the Parent Application No. 09/719,768 should be updated as US 6,787,391. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-15, 17-27-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Narita et al. (US Patent No. 6,329,640)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another", or by an appropriate showing under 37 CFR 1.131.

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Narita et al. teaches a bump forming apparatus comprising: a bonding stage (2) for supporting a semiconductor wafer (201), heating the semiconductor wafer to a temperature for forming bumps thereon; a bump forming head (190) for forming the bumps on the electrodes of the semiconductor wafer; a load and transfer device (130/132) for placing and removing the semiconductor wafer from said bonding stage; storage and holding members for wafer without bumps and wafer with bumps; a post-heating unit (170) with a temperature control unit (180, column 11, lines 25-27, and column 14, lines 2-8); a preheating device with a temperature control unit (column 11, lines 25-27); a position regulating device for adjusting the position of the wafer and the bonding stage to create a desired gap between the wafer and the bonding stage (column 13, lines 16-20); an inert gas or nitrogen inlet/outlet for purging the bonding stage and the bump (column 13, lines 20-29); said temperature controller operable to maintain uniform temperature across the surface of the wafer to prevent warpage, (note the limitation "no warpage" recited by Narita et al. suggests a very narrow temperature differential across the surface of the wafer meets the temperature limitation set forth in 31), (column 6, lines 16-23); said semiconductor wafer composed of quartz or silicon (column 5, lines 34-36). Narita et al. further teaches heated air supply means for preheating the in bump unformed wafer (column 13, lines 20-29)

With respect to claims 1-35-15,17-32, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over the prior art. The intended use of the claimed does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desires functions.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims 1, and 4-25 are rejected under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 122-24, 25 rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's Admitted Prior Art) in view of Inoue et al. (US Patent No. 5,984,165).

AAPA teaches a bump forming apparatus comprising: a bonding stage for supporting a semiconductor wafer and heating the semiconductor wafer to a temperature of forming bumps thereon; a bump forming head for forming the bumps on the electrodes of the semiconductor wafer; a load and transfer device for placing and removing the semiconductor wafer from said bonding stage; storage and holding members for wafer without bumps and wafer with bumps; a semiconductor wafer composed of quartz or silicon (Background of applicants specification paragraph [0002]).

AAPA do not expressly teach a device for executing temperature controls.

However, Inoue et al. teaches a bump forming apparatus comprising; a heating device for preheating the bumping stage prior to bump formation, bump forming device and temperature controllers for both the preheating and post heating operations (column 5, lines 23-47 and column 8, lines 7-58); a temperatures measuring device linked to a feedback control loop (interpreted as programmed device)(column 3, lines 59-65 and column 8, lines 52-58); a heat shield (for thermal insulation (80), column 9, lines 1-7); an inert gas or nitrogen inlet/outlet (81) for purging the bonding stage and the bumps formed (column 9, lines 8-17). Inoue et al. further teaches heated air supply means for preheating the in bump unformed wafer (column 1, lines 27-40 and column 2, lines 39-42).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have employed temperature controllers in the apparatus of AAPA as taught by Inoue et al. in order to perform the bumping process at a constant and stabilized temperature level and also to obtain a uniform and a reliably bumps on the semiconductor or wafer (Inoue et al., column 1, lines 55-57 and column 2, lines 50-53).

With respect to claims 1, and 4-25, the intended use of the instantly claimed apparatus is noted, however, the intended use does not patentably distinguish said claimed apparatus over the prior art. The intended use of the claimed does not structurally limit the apparatus. In addition, the prior art apparatus is capable of performing the desires functions.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Orgami et al. (US 5,430,271), Nakano (US 5,294,038), Lane et al. (US 5,905,302) and Seppala et al. (US 5,665,639) are also cited in PTO-892.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Michael Aboagye
Assistant Examiner
Art unit 1725
11/08/2006

LYNNE R. EDMONDSON
PRIMARY EXAMINER



11/8/06